

CLAIMS WITH MARKINGS TO INDICATE CHANGES MADE

4. (Indicated Allowable-Amended) [The] A surface mount contact [of Claim 3 wherein] for attachment to a circuit board, comprising:

an elongate electrically conductive pin defining a shaft having a longitudinal axis and having an upper end and a lower end,

a pre-formed heat re-flowable bonding member attached to the lower end of the pin,

an insulator surrounding the shaft of the pin intermediate the upper and lower ends and adjacent the pre-formed heat re-flowable bonding member,

the upper end of the pin being formed with a head with an outer surface that is dimensioned to be positioned on, and bonded to, a conductive pad on a circuit board, and the lower end of the pin being dimensioned and configured to be attached to a lower circuit board,

the head being [is] formed with at least one channel that opens through an outer surface of the head and a peripheral wall of the head.

8. (Indicated Allowable-Amended) [The] A surface mount contact [of Claim 7 wherein] for attachment to a circuit board, comprising:

an elongate electrically conductive pin defining a shaft having a longitudinal axis and having an upper end and a lower end,

a pre-formed heat re-flowable bonding member attached to the lower end of the pin,

an insulator surrounding the shaft of the pin intermediate the upper and lower ends and adjacent the pre-formed heat re-flowable bonding member,

the pre-formed heat re-flowable bonding member being a solder ball,

the insulator [has] having a conductive pad formed on an upper surface thereof surrounding the shaft of the pin adjacent the pre-formed heat re-flowable bonding member.

13. (Indicated Allowable-Amended) [The] A discrete surface mount contact [of Claim 12] for soldering to a circuit board, [further] comprising:

an elongate electrically conductive pin defining a shaft having a longitudinal axis and having a free upper end and a lower end,

a pre-formed heat re-flowable solder ball soldered to and fully surrounding the lower end of the pin,

a discrete insulator surrounding and permanently attached to the shaft of the pin adjacent the pre-formed solder ball and sealing the shaft against solder migration,

a discrete conductive collar mounted on and surrounding the shaft of the pin intermediate the insulator and upper end of the pin.

20. (Indicated Allowable-Amended) [The] A circuit board assembly [of Claim 17 wherein] comprising:

an upper circuit board having contact positions,

a plurality of discrete electrically conductive pins each having a shaft with upper and lower ends, the upper ends of each of the pins being attached to the upper circuit board at one of its contact positions and being arranged in a predetermined pattern,

a plurality of insulators each surrounding an intermediate position of the shaft of a corresponding pin,

a lower circuit board opposing and generally parallel with the upper circuit board, the lower circuit board having a plurality of conductive pads arranged in the predetermined pattern,

a plurality of conductive joints each formed by re-flow of a pre-formed heat re-flowable bonding member attached to the lower end of a corresponding pin, each conductive joint bonding the lower end of a corresponding pin and a corresponding conductive pad and forming an electro-mechanical bond therebetween,

each insulator being [is] formed with a second conductive pad that is bonded by a corresponding second solder joint to a corresponding second conductive pad on the upper circuit board.

21. (Indicated Allowable-Amended) [The] A circuit board assembly [of Claim 17

wherein] comprising:

an upper circuit board having contact positions,

a plurality of discrete electrically conductive pins each having a shaft with upper and lower ends, the upper ends of each of the pins being attached to the upper circuit board at one of its contact positions and being arranged in a predetermined pattern,

a plurality of insulators each surrounding an intermediate position of the shaft of a corresponding pin,

a lower circuit board opposing and generally parallel with the upper circuit board, the lower circuit board having a plurality of conductive pads arranged in the predetermined pattern,

a plurality of conductive joints each formed by re-flow of a pre-formed heat re-flowable bonding member attached to the lower end of a corresponding pin, each conductive joint bonding the lower end of a corresponding pin and a corresponding conductive pad and forming an electro-mechanical bond therebetween,

a first melting temperature of the solder in the solder joints of the pins to the contact position being [is] above a second melting temperature of the solder in the solder joints that bond the lower ends of the pins to the conductive pads on the lower circuit board.

23. (Indicated Allowable-Amended) [The] A circuit board assembly [of Claim 22

wherein] comprising:

an upper circuit board having contact positions,

a plurality of discrete electrically conductive pins each having a shaft with upper and lower ends, the upper ends of each of the pins being attached to the upper circuit board at one of its contact positions and being arranged in a predetermined pattern,

a plurality of insulators each surrounding an intermediate position of the shaft of a corresponding pin,

a lower circuit board opposing and generally parallel with the upper circuit board, the lower circuit board having a plurality of conductive pads arranged in the predetermined pattern,

a plurality of conductive joints each formed by re-flow of a pre-formed heat re-flowable bonding member attached to the lower end of a corresponding pin, each conductive joint bonding the lower end of a corresponding pin and a corresponding conductive pad and forming an electro-mechanical bond therebetween,

the upper end of each pin being formed with a head with an outer surface that is dimensioned to be positioned on, and surface bonded to, a second conductive pad on the upper circuit board,

the head being [is] formed with at least one channel that opens through the outer surface of the head and a peripheral wall of the head.